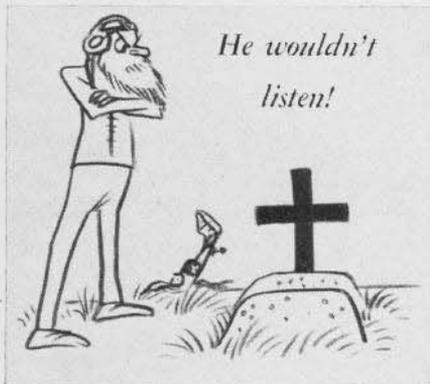


GRAMPAW PETTIBONE



Falling Leaves

An instructor was demonstrating a falling leaf to his student. The maneuver was commenced at 5,000 feet and after about 4 oscillations the controls were transferred to the student to continue the maneuver. Before the instructor realized it, the airplane had descended to such a low altitude that a recovery was impossible. The aircraft crashed at approximately a 45° angle. Both instructor and student received serious injuries.

BUREAU COMMENT—There have been several other reports of primary trainer crashes in which witnesses testified they had seen the aircraft descending in attitudes resembling a falling leaf. The above case is the first of these in which the pilot or passenger lived to tell what happened. In view of their experience, it is possible that the pilots of these other trainers also neglected to watch their altitude while concentrating on the maneuver. Instructors and students should be cautioned to watch their altitude during a prolonged falling leaf.

Psycho-Accident-Analysis



Do you sometimes wonder how you would react in an emergency? Here is the way one pilot with 365 hours flight time reacted when he got caught in a snowstorm.

He was flying a few hundred feet over the water in an SBD-4 when suddenly he found himself in an unfore-casted snowstorm. (In case you have never flown in a snowstorm, it is just like flying in a heavy fog; if you haven't flown in a fog, just keep on being lucky.) Upon entering this snowstorm, the pilot immediately

went on instruments, started climbing, and headed for land. He lost the use of his air speed and rate-of-climb indicators at 3,500 feet. His engine quit when he got near the beach and he landed 300 yards offshore where he was soon rescued from the frigid water by two civilians in a small boat.

At first glance, this looks like a pretty fair performance; the pilot was good enough and lucky enough to get back and tell his own story, which is the most important thing in any accident. It is only when you begin to ask a few questions that you realize just how lucky this pilot really was and how easily there might have been no pilot to tell this story.

The pilot's first reaction in this emergency was perfect, but he didn't follow through. His air speed and rate-of-climb indicators went out because of icing in the Pitot static tube. The pilot did not use the Pitot heating unit, which would have prevented such icing; he did not even know there was such an animal. With 365 hours flying time, he must have known about his carburetor air control and his fuel tank selector valve, however, but he did not use these either. The investigating board was unable to determine whether the engine failure was due to carburetor icing or fuel exhaustion; due to atmospheric conditions and the length of time the pilot had flown on one tank, either might have been responsible. Lastly, he made no attempt to establish radio contact with the base.

Viewed in this light, the pilot's reactions don't look quite so good. His

errors were partly due to lack of experience, but more specifically to lack of familiarity with his equipment and to his not being mentally conditioned to this type of emergency.



All of which indicates the need for more complete indoctrination. Pilots must become more intimately acquainted with

their equipment, so they will be able to operate it properly when necessary. This accident further emphasizes the need for "mental emergency drills," as recently recommended in this section. Only by such self-imposed drills will pilots be able to react promptly and correctly when emergencies arise.

Shifting Winds

MCAS, MOJAVE.—This base is a good training ground for the African desert. Climate is hot, rain is a rarity, and humidity, averaging around 25 percent, makes the country ideal for rattlesnakes, coyotes, sagebrush, greasewood, and Joshua trees.

Our trade-mark is the wind, which is high, gusty, and shifty. Thirty-five- and forty-knot winds are not uncommon and velocities have topped 70 knots several times during the last 2 months. These winds, when steady, should provide excellent field carrier-landing practice conditions.

This wind has caused the one severe crash since the group's arrival. A pilot landed in a strong, quickly shifting wind, varying from 11 to 31 knots, west to northwest. The pilot landed with full flaps. A gust lifted his right wing and threw him into a left turn off the runway and toward the control tower. Throttle was applied in an attempt to straighten out, resulting in an increased turn to the left. Full throttle was then applied for take-off. A steep climb was attempted to avoid the control tower, but with flaps down and excessively nose-high attitude, the airplane mashed into the control tower, the left wing hit the railing, and the plane crashed.

In this case the pilot made two errors. 1. Landing with full flaps in a tricky wind of varying velocity, when

HAVE YOU A DILBERT
IN YOUR SQUADRON?



a wave-off might suddenly have been called for; 2. Attempting to straighten out a landing run from a left turn by application of throttle. (This is a moot question among pilots, and Bureau comment would be appreciated.)



Grampaw Pettibone says:

Opinion of Bureau experts, expressed in one word, is "NO." Expressed in many words, it is a bit more complicated. Throttle is of help only in the initial stages of a landing run, before the rudder loses its effectiveness; and then only at the first indication of deviation from course. Also, only short bursts of throttle should be used. In the case in question, the use of throttle definitely should not have been attempted.

Instrument Flight in Unfamiliar Airplanes

Two pilots with 400 hours flight time were practicing instrument flying in an SNJ-4. Evidence indicates that during a recovery from an unusual position the aircraft was stressed beyond its designed limits. The left aileron gave way causing subsequent loss of the left wing. The airplane then went into such a violent spin that neither pilot was able to abandon the plane before it crashed.

Both pilots had accumulated all their recent flying time in the TBF, which has heavy control forces, whereas the SNJ is very light on the controls. It is believed this fact may have been contributory in causing one or both of the pilots to overcontrol during recovery from an unusual position.

As a result of this crash, it was recommended that pilots regularly flying TBF airplanes be prohibited from performing any acrobatics or intentionally assuming unusual attitudes in instrument flight training in SNJ's.

BUREAU COMMENT—It is considered impractical for the Bureau to discriminate among designated pilots as to who may have the necessary technique to make instrument flights in various type airplanes. Unfortunately, the TBF is not the only airplane with heavy control forces. Also, it might be equally dangerous for pilots who are normally engaged in flying airplanes with light control forces to attempt instrument flying in an airplane with heavy control forces, without first having refamiliarized themselves with the flight characteristics of such aircraft.

This is, accordingly, considered a matter which must be left to the discretion of the squadron commander. He is in a position best able to evaluate all the circumstances; to require further indoctrination and training where

indicated and to initiate such safety measures as may be necessary to guard the safety of the personnel under his command.

Any airplane can be broken in the air if stressed beyond designed limits. Stress limits of all airplanes are clearly stipulated in BuAer Technical Orders. It is the pilot's responsibility to know and observe these limits. During instrument flights, safety pilots, as the name implies, bear the burden of responsibility for flight safety.

The dangers herein brought out must be fully appreciated to be forestalled. Certainly no pilot should be permitted to make an instrument flight in a type airplane which he has not recently flown. Once pilots understand the dangers involved, ready compliance with this safety measure should be obtained. The amount of refamiliarization necessary will depend on the individual pilot and also on the length of time since he has flown a particular type airplane. In the case in question it is to be noted that the pilots concerned were regularly engaged in flying TBF's. During the preceding three months, one pilot had had no SNJ flight time and the other pilot had had only one-half hour. A perfect set-up for trouble.

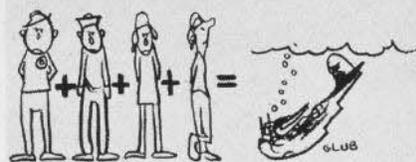
Faulty Inspection and Test

Arriving at a point 264 miles from land during a navigation flight, the crew of a PBY-5 suddenly discovered that the fuel line to the starboard tank was blocked. At this time there were 150 gallons of fuel remaining in the port tank. Bombs were immediately jettisoned and the airplane was headed for the beach at reduced power. A forced landing was made when approximately 45 gallons of fuel remained. The bow window was broken during this landing; sea choppy, wind 17 knots.

It was discovered, after landing, that the starboard fuel cut-off valve (type D-4), which has external access only, was in the "Off" position and that the handle was missing. The broken window and the state of the sea prevented take-off. The airplane was subsequently lost when a storm came up, while being towed ashore.



The recent history of this airplane indicates it had just undergone fuel-tank repairs. At this time A & R



personnel had noticed the valve handle was not secured to the valve shaft, but had not reported it to the proper authorities. The airplane had passed a satisfactory flight test after coming out of A & R.

The Trouble Board, therefore, correctly determined that this accident, which might very easily have been fatal to all hands, was caused by carelessness on the part of the following personnel: a. Faulty overhaul inspection by A & R personnel; b. Faulty maintenance inspection by squadron personnel prior to flight; c. Failure of flight crew during test flight to check positive fuel flow from both tanks; d. Failure of flight crew to check positive fuel flow from starboard tank during early stages of this flight.

Misapplication of Caution

After 45 minutes in the air, the pilot of an NE-1 noted a decrease of approximately 250 R. P. M. and immediately landed in a nearby hayfield to check his magnetos. After finding they were functioning satisfactorily, he attempted to take off again. His take-off was exceptionally long, however, due to an up-hill grade, a light wind, and the retarding effect of the long hay on the balloon tires. In an attempt to avoid some trees at the end of the field, the pilot stalled his airplane and spun into an adjoining graveyard from an altitude of approximately 30 feet.



Grampaw Pettibone says:

No; the pilot didn't bury himself!—He wasn't even injured, but let's hope he interred any misbegotten ideas he may have had about being a "hot" pilot.

This unnecessary washout occurred because of the pilot's lack of knowledge of his equipment. As the Trouble Board pointed out, the mags could have been checked as well in the air as on the ground; also, although the pilot had 650 hours flying time, he didn't know enough to check for a creeping throttle (not uncommon in the NE-1) or to check the carburetor heat control.

Did I say this accident was the result of lack of knowledge? I must be slipping! Change to "gross ignorance."